



# ENERGY POLICY UPDATE

October 14, 2014

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email [Gloria Castro](mailto:Gloria.Castro@az.gov).

## UPCOMING WEBINARS

- ENERGY STAR Webinars
- U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014

## UPCOMING EVENTS 2014 – 2015

- Ute Tribe Energy Conference & Expo**  
Oct. 14-15 Denver, CO
- Nat'l. Alternative Fuel Vehicle (AFV) Day Odyssey**  
Oct. 17
- Solar Power International.**  
Oct. 20-23 Las Vegas, NV
- GreenBuild International Conference & Expo**  
Oct. 22-24 New Orleans, LA
- World Bio Markets USA**  
Oct. 27-29 San Diego, CA
- VERGE SF 2014**  
Oct. 27-30 San Francisco, CA
- Governor's Celebration of Innovation**  
Nov. 13 Phoenix, AZ
- Western Water Conference**  
Nov. 13 Huntington Beach, CA
- ACEEE Intelligent Efficiency Conference**  
Nov. 16-18 San Francisco, CA

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The Arizona Republic now has limited access. As such, links may or may not work.

## ARIZONA-RELATED

[Apple's Sapphire Glass Manufacturer GT Advanced Tech Has Filed for Bankruptcy](#)  
[Phoenix Business Journal, Oct. 6] GT Advanced Technologies Inc., the company working with [Apple](#) to manufacture sapphire glass in Mesa, filed for Chapter 11 bankruptcy protection today. The Merrimack, New Hampshire-based company expects to conduct business as usual while it develops a reorganization plan, according to a company statement. "GT has a strong and fundamentally sound underlying business," [Tom Gutierrez](#), GT's president and CEO, said in a prepared statement. "Today's filing does not mean we are going out of business; rather, it provides us with the opportunity to continue to execute our business plan on a stronger footing, maintain operations of our diversified business, and improve our balance sheet." Apple announced last year it had signed an agreement with GT to produce sapphire glass for its mobile products. [The glass is being manufactured in Mesa, and is being used for the new Apple Watch](#)

## Building the Framework for the Future of Biofuels

[ASU News, Sept. 29] Biofuels – fuels made from plants – are seen by many as one of the better options for brightening the national energy outlook. They offer a promising renewable resource as a replacement for nonrenewable fossil fuels, and a way to reduce the amount of greenhouse gas emissions being pumped into the atmosphere as a result of our use of conventional petroleum-derived fuels. They could help the United States take major steps to reduce the country's dependence on oil from other parts of the world. For more than five years, Amy Landis has led research that is revealing the potential rewards of developing large-scale biofuels production, as well as the potential drawbacks we would face in the effort. "We are documenting that there would be environmental benefits, but also trade-offs in growing biofuels that would have to be dealt with," said Landis, an associate professor in the School of Sustainable Engineering and the Built Environment, one of the Ira A. Fulton Schools of Engineering at Arizona State University (ASU). Two National Science Foundation (NSF) grants combined to provide about \$650,000 for projects directed by Landis, enabling her to paint a clearer picture of the impacts of developing a major biofuels industry. Both grants were through the NSF's Chemical, Bioengineering, Environmental and Transport Systems Division. One project looked at the feasibility of growing bioenergy crops on marginal lands where soil nutrients first have to be restored to enable agricultural use. A second project involved forecasting the environmental impacts of next-generation biofuels. According to Landis, lands damaged by industrial waste or other pollutants could be restored sufficiently to support agriculture for growing bioenergy crops.

### Renewable Energy Markets Conference

Dec. 2-4 Sacramento, CA

### Solar Power Generation USA

Feb. 4-5 San Diego, CA

### GreenBiz Forum 2015

Feb. 17-19 Phoenix, AZ

### 2015 Sustainability Solution Festival

Feb. 17-22 Phoenix, AZ

### Alternative Clean Transportation (ACT) Expo

May 4-7 Dallas, TX

### Solar Power Generation Mexico

May 19-20, 2015

World Trade Center, Mexico

### Green Building Lecture Series

Granite Reef Senior Center

Scottsdale, AZ

### ASU Sustainability Series Events

### Green Building Lecture Series

Scottsdale, AZ

## UPCOMING INTERNATIONAL BUSINESS EVENTS

### Mariposa Port Entry Grand Opening – Oct. 15 in Nogales

The new port of entry is here, making border crossing faster.

**GPEC Annual Dinner – Oct. 17 in Phoenix** by GPEC, when they throw this party, everyone who is anyone is there! [RSVP](#)

**Global Chamber® 'Global Careers' - Oct. 21 in Glendale**  
Student week event with 7 CEO's and hundreds of business leaders and students discussing business opportunities and growth. [RSVP](#)

**MBDA Global Business Conference - Oct. 23-24 in Phoenix** Network. Connect. Do Business. Succeed! [RSVP](#)

**PCFR Int'l. State of the State - Oct. 27 in Phoenix**  
One global event you can't miss every year. The lunch that keeps on giving, with a flavor of foreign policy, economic development and business growth. [RSVP](#)

**Global Chamber® Launch - Nov. 5 in Phoenix**  
Oh my, it's coming! Watch for the new website and a whole new way of getting connected with global business. [More info.](#)

**Global Chamber® Tucson**

### Energy Efficiency Programs Yield Significant Energy Savings at Arizona Utility

[Public Power Daily, Sept. 24] The Salt River Project exceeded its annual goal of helping residential and commercial customers save energy and money through the utility's energy efficiency programs and initiatives, the Arizona utility said Sept. 23. The SRP board has set a goal to meet 20 percent of SRP's retail electricity requirements through sustainable resources by the year 2020. Currently, SRP is ahead of schedule – providing about 12.8 percent of retail energy needs with sustainable resources, including wind, geothermal, solar, landfill gas, biomass and hydropower as well as energy-efficiency programs. Last year, energy efficiency programs for residential and commercial customers provided an annual energy savings equal to 2.3 percent of SRP's retail energy sales, saving 640 million kilowatt-hours, or enough electricity to power about 35,000 homes for a year, the utility said.

### Ethanol Flowing Again at Pinal Energy

*Local plant resumes production, hires back workers after year-plus hiatus*

[Central Arizona College, Oct. 7] It took a little more than a year, but Pinal Energy is back. One of Maricopa's largest employers, Pinal Energy laid off most of its workers at the end of 2012 and completely halted production – a move that was forced by a weak ethanol market. However, by March of this year, the market had bounced back, and Pinal Energy was ready to resume business. Matt Rynearson, plant manager at Pinal Energy, told the Maricopa Monitor that his company hired back about 40 employees, putting staffing levels at the same point they were prior to the plant's shutdown. Rynearson said the company functions on a commodity market, and grain is the main commodity. According to the Pinal Energy website, it produces 50 million gallons of ethanol each year from approximately 18 million bushels of grain acquired from local producers and the Midwest.

### Joe "Solar Man" Hui Wants \$5 Million for Solar Amusement Park, Solar Gigafactory

[Phoenix Business Journal, Oct. 8] Joe "Solar Man" Hui wants to build a Solar Wonderland amusement park near Scottsdale – and he's taken to crowdfunding to raise \$5 million to make it happen. The CEO of Scottsdale-based Monarch Power Corp. has launched an Indiegogo crowdfunding campaign to not only raise funds for his amusement park, but also to market his Lotus solar panels and a solar gigafactory. Solar Wonderland will be an energy amusement park to teach the community about solar power and the physics of energy. It will also have rides such as a free fall "Gravity" ride, a magnetic "Maglev Back to the Future" ride, an electronic "Dr. Frankenstein in the Tesla Tower" ride, a heat engine "The Heat is On" ride and a solar adventure "Alice in the Optics Wonderland" ride. "I want the Solar Wonderland to help our students to get excited about learning physics and how to live a sustainable lifestyle," said Hui, an [Arizona State University](#) electrical engineering and energy professor emeritus. "I want a smarter science museum to raise the level of science education. It's also a place where I can market my inventions." Solar Wonderland is planned on five acres next to Butterfly Wonderland on Salt River Pima-Maricopa Indian Community land near Scottsdale, and will be part of the Odyssey of the Desert entertainment district off Loop 101 freeway and Via de Ventura.

### Residential Solar: Savings Through the Roof

[The Daily Courier, Oct. 8] Some people dismiss solar energy as "hocus pocus" - that it's just a feel-good idea that will never make fiscal sense. To the solar naysayers, Joan McPherson has four words: "Read my electric bill." She and her husband, Bruce, had a roof-top solar panel system installed at their Prescott home last November. The McPhersons' October 2013 APS bill, pre-solar: \$246.96. The McPhersons' October 2014 APS bill, post-solar: \$24.71. Even with the \$108.61 they pay monthly to lease the solar system, the total energy bill of \$136.32, a savings of \$110 - or a whopping 45 percent. From schools to nonprofits to local government, organizations have benefited from grants to launch solar-energy projects. But what about individuals who generally can't tap into "other people's money"? Several in the Prescott area who have paid for their own solar systems say they are saving big money, every month. At the McPherson household, off Prescott Lakes Parkway, APS bills pre-solar ranged from \$122 to \$285, averaging around \$177. Since going solar, their APS-plus-panel leasing monthly totals have had a tight range, from \$130 to \$136, averaging \$132. The average savings: 25 percent.

### SRP's Customers Step Up Efficiency

[Arizona Republic, Oct. 13] Salt River Project's nearly 1 million customers used 2.3 percent less electricity in 2013 than they would have without help from the utility conserving electricity. The municipal utility's customers conserved 640 million kilowatt-hours of electricity by using low-wattage light bulbs, replacing inefficient appliances and repairing attic duct work, among other measures, SRP reported. That figure is even greater than the 2013 savings for Arizona Public Service Co., which saved 539 million kilowatt-hours of electricity. APS has about 1.1 million customers. The utility's report on different calendar and fiscal years. Both utilities exceeded their

**Launch - Nov. 6 in Tucson**  
Also coming to Tucson,  
introduced by Mayor Rothschild.  
[More info.](#)

**Governors Celebration of  
Innovation - Nov. 13 in Phoenix**  
By AZ Tech Council, the event for  
tech innovators in Arizona. [More  
info.](#)

annual energy-efficiency goals.

#### [SolarCity Offering New Loans Paid Off by Electricity Production](#)

[Arizona Republic, Oct. 8] SolarCity Corp. is offering a new loan program for rooftop solar that will allow customers to own their panels and circumvent the state of Arizona's intentions to tax leased rooftop solar panels. The San Mateo, Calif.-based company, which dominates the Arizona solar installation market, introduced a program Wednesday called MyPower. Company officials say it is a way for customers to install solar and save money on electricity with no upfront costs. Customers will repay the loan with monthly payments based on how much electricity the solar panels generate. Customers with the proper alignment of their roofs and sun exposure can get financing that will have them paying about 9 cents per kilowatt hour of electricity, with rates rising 2.9 percent annually, officials said. The average price of residential electricity from utilities in Arizona was about 12.5 cents in July, according to the most recent U.S. Department of Energy data. "This should be a game changer," SolarCity CEO Lyndon Rive said. "We are very excited about this." The Arizona Department of Revenue decided last year that solar panels that are leased should be assessed for property taxes. State law exempts rooftop panels that people own from such taxes. That has put a cloud over the industry, as the tax payments that will come due next year could wipe out any savings for solar customers. The MyPower program, because it is a loan, not a lease, would avoid that issue, Rive said.

#### [Western Governors' Drought Forum Meets in Arizona To Discuss Impact on Mining, Manufacturing, Industry](#)

[Western Governors' Association, Oct. 8] The second workshop of the [Western Governors' Drought Forum](#) just concluded in Tempe, Ariz. Participants at the two-day meeting examined the impact of drought on the manufacturing, mining and industrial sectors. The Drought Forum opened with a keynote address by Sandra Fabritz-Whitney, Director of Water Strategy at Freeport-McMoRan, who noted that the state of Arizona used as much water last year (7 million acre feet) as it did 1957. The speech was followed by a session that focused on drought conditions in Arizona and how the state is innovating in response. Nancy Selover, Arizona State Climatologist, and Kevin Werner, Regional Climate Services Director (Western Region) for NOAA, both took part. Later sessions on the first day addressed drought's impact on the manufacturing, mining and industrial sectors and a presentation by Christa McJunkin, Senior Water Resource Analyst at the Salt River Project (SRP), on a partnership between the Gila River Indian Community and SRP.

### **ALTERNATIVE ENERGY & EFFICIENCY**

#### [Fuel-Economy Savings Kick Into High Gear for New Autos](#)

[Arizona Republic, Oct. 9] There's A Good Chance The Next New Car Or Truck You Purchase Will Be The Most Fuel-Efficient Vehicle That You've Ever Owned. Fuel Economy Has Kicked Into High Gear Over The Last Several Years, Just As More Americans Are Buying Vehicles Again. Fuel Efficiency Is Projected To Get Even Better, And Auto Sales Are Expected To Continue Improving, Too. Despite A Steady Five-Year Upturn In Sales From Recessionary Lows, The Average Vehicle On The Road Is 11 Years Old, Implying More Demand Ahead. Recent Surveys Have Shown Vehicles Are Still Near The Top Of Consumers' Big-Ticket Wish Lists, And More People Now Have The Financial Resources To Afford A New Set Of Wheels. Auto-Loan Delinquencies Are Near Historic-Low Levels, With Well Under 1 Percent Of Loans Delinquent, The American Bankers Association Reported This Week. Many People Visiting A Showroom For The First Time In Years Will Be Pleasantly Surprised By The Miles-Per-Gallon Numbers Posted On Vehicle Window Stickers. After A Lull In Fuel-Economy Improvement During The 1990s And The Early Part Of Last Decade, The Numbers Are Rising Again, According To A New Report. The Average Car And Light Truck Sold Last Month Is Projected To Get An Average 25.3 Miles Per Gallon, Up From 20.1 Miles Per Gallon Seven Years Earlier, According To A Study By The University Of Michigan Transportation Research Institute. Those Averages Are Weighted Based On Vehicle Sales And Reflect Window-Sticker Estimates For Fuel Efficiency, Rather Than Actual Results On The Road.

#### [LED There Be Light: 3 Share Nobel for Blue Diode](#)

[Associated Press, Oct. 7] STOCKHOLM — An invention that promises to revolutionize the way the world lights its homes and offices — and already helps create the glowing screens of mobile phones, computers and TVs— earned a Nobel Prize on Tuesday for two Japanese scientists and a Japanese-born American. By inventing a new kind of light-emitting diode, or LED, they overcame a crucial roadblock for creating white light far more efficiently than incandescent or fluorescent bulbs. Now LEDs are pervasive and experts say their use will only grow. "Incandescent light bulbs lit the 20th century; the 21st century will be lit by LED lamps," the Nobel

committee said in announcing its award to Japanese researchers Isamu Akasaki and Hiroshi Amano and naturalized U.S. citizen Shuji Nakamura. Their work, done in the early 1990s, led to a fundamental transformation of technology for illumination, the committee said. And when the three arrive in Stockholm to collect their awards in early December, "they will hardly fail to notice the light from their invention glowing in virtually all the windows of the city."

#### [ZEB Pilot House Generates Much More Electricity Than It Needs](#)

[Gizmag.com, Sept. 24] International architecture firm Snøhetta has partnered with Norway's Research Center on Zero Emission Buildings (ZEB) and to design and build a remarkable experimental house that helps move the development of very efficient buildings forward. The ZEB Pilot House is claimed to generate almost three times the amount of electricity it requires, with the significant surplus available to help run an electric car, for example. A lot of sustainable technology was used on the build. The roof sports a 150 sq m (1,614 sq ft) photovoltaic array, and a 16 sq m (172 sq ft) solar thermal panel array, in addition to a rainwater collection system that provides water for toilet and garden use. In order to ensure all available rays are caught, the roof also slopes 19 degrees toward the southeast. A Snøhetta representative told Gizmag that the photovoltaic array is expected to produce 19,200 kWh annually, while the home's total electricity needs are calculated at just 7,272 kWh per year.

### **ENERGY/GENERAL**

#### [Developer Proposes New Power Transmission "Superhighways" for Midwest, Southwest](#)

[Chicago Tribune, Aug. 4] The wind is so strong in Iowa and Kansas that more wind farms there could power the country's largest cities if only there was a way to move that electricity to where most people live. Enter Michael Skelly, a Houston businessman who envisions building five superhighways -- transmission lines -- to carry vast amounts of wind-generated power across more than 3,000 miles, multiple states, hundreds of jurisdictions and thousands of pieces of privately owned land. The lines, the diameter of a human arm, would be hoisted on 150-foot-tall structures, about the height of the Statue of Liberty foot to top of torch. The founder and president of Clean Line Energy Partners has two \$2 billion lines in the works that would slice through Illinois: Rock Island Clean Line across the top of the state, and Grain Belt Express downstate, each shipping enough electricity to power 1.4 million homes annually. Importing that much cheap wind power has the potential to dramatically cut electricity prices in Illinois and help the state meet its goals of deriving 25 percent of its energy from renewable sources such as wind and solar by 2025. Skelly's idea is that with high-voltage lines crisscrossing the United States from every area where the wind blows, they would nearly always carry wind-generated power. That's significant because in Illinois and states to the east, wind blows intermittently, which results in electricity generated in fits and starts.

#### [EIA Short-Term Energy Outlook Looks Positive for Winter Electricity, Natural Gas](#)

[Energy Manager Today, Oct. 9] The US Energy Information Administration (EIA) issued its [October 2014 Short-Term Energy Outlook](#), forecasting that temperatures this winter will be warmer than last winter, which will result in less demand for heat. Although electricity prices are expected to be higher this winter, the warmer temperatures and lessened demand will keep costs in check.

#### [Energy Imports Drop To 29-Year Low](#)

[The Hill, Oct. 10] Net energy imports to the United States fell to their lowest point in 29 years in the first half of this year when compared to energy consumption. The figure serves as a sign of the United States' increasing energy independence and its ability to supply more of the energy it consumes. Net imports fell 17 percent when compared with the first half of 2013, the Energy Information Administration (EIA) said Friday. Meanwhile, energy consumption grew 3 percent in the period but was dramatically outpaced by an increase in energy production, leading to the nearly three-decade record.

#### [Report Examines Impact of Solar on Utility Profits](#)

[Arizona Republic, Sept. 29] A new report from Lawrence Berkeley National Laboratory indicates rooftop solar has the potential to swipe 15 percent or so from profits at electric companies. But it also said solar alone won't cause a utility "death spiral," a term common in solar discussions regarding what the technology will do to traditional utilities. The study concluded that the financial impacts from widespread solar use are likely to be much more pronounced for the people who own stock in publicly traded utilities than for the customers who buy their electricity. The report was funded by the U.S. Department of Energy Solar Energy Technologies Office. The death spiral is what some experts predict will happen to utilities when so many people begin using solar power that the power rates charged to non solar customers jump high enough to

convince most other customers to shift to solar.

#### [The Key to Nuclear's Future Or An Element of Doubt?](#)

[Reuters, Oct. 13] Cadarache, FRANCE – Behind thick glass in a laboratory nestled in French woodland, a silvery molten metal swirls like a liquid mirror. But the material is no mere novelty; as dangerous as it is captivating, it could offer a solution to the nuclear power debate. For sodium, the sixth-most abundant element on the planet, is being held up as the key to one of several new types of nuclear reactor being developed as governments grapple with the problem of making atomic energy more environmentally friendly, safe and financially viable. The 2011 Fukushima disaster in Japan effectively brought a global nuclear boom to a halt, but a decade-old research programme into new reactors has regained relevance of late. Quite apart from Germany's decision to phase out a large slice of its nuclear capacity in the wake of Fukushima, Britain and Belgium have recently switched off several ageing reactors over safety concerns while a number of U.S. plants have closed because they can no longer compete with cheap shale gas. Launched by the United States in 2000, the Generation IV International Forum (GIF) has 13 member countries including China, Russia, France, Japan and Britain, which have whittled down nearly 100 proffered concepts to focus research on six nuclear reactor models. By far the most advanced of the six is the sodium-cooled fast reactor (SFR), developed by France, Russia and China from a concept pioneered in the United States in the 1950s. The SFR's main advantage is that it can burn spent uranium and plutonium. These unwanted byproducts from water-cooled reactors have been piling up for years and the World Nuclear Association estimates stocks at about 1.5 million tonnes. "We could produce power for several thousands of years with that without getting new natural uranium," said Christophe Behar, the vice-chairman of GIF. Behar, also head of research at French nuclear agency CEA, points out that SFRs can also burn up uranium's most long-lived radioactive waste products, reducing the need for deep storage.

#### [Schneider Participates in Mexican Distributed Solar Venture](#)

[Energy Manager Today, Sept. 30] Schneider Electric is partnering with Greenwood Energy and ILOSS to sell power from 250 MW of new distributed solar energy installations to commercial customers across Mexico. In August, [Greenwood and ILOSS first announced their \\$500 million investment](#) to deliver 250 MW of new solar power capacity across Mexico. Greenwood-ILOSS will finance and build the solar arrays at commercial locations across the country and will own the installations once they are operational. Schneider will supply most of the array components and offer long-term sales contracts for electricity generated by the projects to commercial energy customers with no up-front or maintenance costs.

## **INDUSTRIES AND TECHNOLOGIES**

#### [Energy for a Rainy Day, or a Windless One](#)

[New York Times, Oct. 7] With new energy supplies and demand growing rapidly worldwide, companies in the United States, Europe and across the developing world are spending billions of dollars each year on new power plants, [wind turbines](#) and solar panels. Now the focus is increasingly on how to store the bonanza, so that electricity generated from the likes of renewables can be quickly pumped into a country's energy network as demand skyrockets — say, when people return home from work. To meet global [climate change](#) commitments, the International Energy Agency recently called on the United States, the European Union, China and India to invest a combined \$380 billion in energy storage by the middle of the century. That would fund a total of 310 gigawatts of new projects, or more than 28 times what is currently expected to be built by the end of the decade. Electric utilities, technology start-ups and research institutes worldwide are beginning to rise to the challenge.

#### [Giant Battery Unit Aims at Wind Storage Holy Grail](#)

[Bloomberg, Oct. 14] At a windy mountain pass on the edge of the Mojave Desert, North America's most potent collection of batteries used for storing unused power is humming its way toward an electricity revolution. Southern California Edison, a utility that serves about 14 million people, has amassed more than 600,000 lithium-ion battery cells -- enough to power 2,000 Chevrolet Volts -- at a substation in Tehachapi, California. The \$54 million, two-year test project aims to collect power generated from the area's 5,000 wind turbines and store it for future use. Cost-effective storage for wind and solar energy is the industry's "Holy Grail," Morgan Stanley says. That's because times of high output during sunny days or windy nights don't always match up with peak demand. While batteries are currently too expensive for large-scale use, improving technology is cutting costs, which means storage systems could replace some plants and avoid the need for new ones, as well as cut demand for oil, according to UBS AG and Citigroup Inc.

### [How to Enhance Power and Grid Reliability and Resiliency](#)

[Energy Manager Today, Sept. 30] Public funding and supportive government policies have been a boon that has sparked innovation, technological advances, private sector investment and job creation in renewable energy, clean technology and energy efficiency across the US. Spurred forward by pioneering legislation, such as [California's AB 2514 energy storage mandate](#), this pattern of "green" socioeconomic development and growth is now beginning to gain real traction in the energy storage market space. A string of recent power outages around the country – including in New Jersey, San Diego, Los Angeles and Santa Clara – highlights the fragility of the US electricity grid and power supplies, as well as their vulnerability to the increased frequency of extreme weather events being experienced across the U.S. and countries around the world. Are power outages in the US isolated, rare occurrences or indicative of persistent, more troubling, problems? Unfortunately, it appears it's the latter. Assessing the state of the US power grid, the American Society of Civil Engineers (ASCE) in August last year gave [the country's aging power infrastructure an overall](#) – barely passing – grade of D+. The fragility of the electricity grid and power supplies poses a profound threat not only to utilities and the electrical system, but by extension, to the US economy and society as a whole. In fact, the [US has the worst performing electricity grid among developed nations](#), according to the US Department of Energy (DOE) and North American Electric Reliability Corp. (NERC).

### [In a First, Commercial Coal Plant Buries Its CO2](#)

*A coal plant in Saskatchewan will capture most of its carbon pollution—and use it to extract oil from the ground.*

[MIT Tech Review, Oct. 3] A coal plant that opened today in Saskatchewan captures and buries most of the carbon dioxide it emits—with a significant caveat: the carbon dioxide is being used to force more oil out of the ground. The 110-megawatt Boundary Dam project, operated by provincial power utility SaskPower, is a refurbished coal-fired generator. It includes new post-combustion technology designed to absorb and capture 90 percent of the carbon dioxide in the plant's exhaust, one approach to so-called carbon capture and storage, or CCS. "It's significant because it's the first commercial-scale CCS installation at a power plant," says Howard Herzog, an expert on carbon sequestration, and a senior research engineer with the MIT Energy Initiative. The company argues in a statement that it is "transforming one of the world's most abundant and affordable sources of energy to one of the cleanest." However, the coal it's burning, lignite, is the dirtiest around, and the 10 percent of CO<sub>2</sub> that the plant can't capture will still amount to 150 tons of carbon dioxide per gigawatt-hour. That's better than the 420 tons emitted by a natural gas power plant but more than the life-cycle carbon dioxide emissions associated with a nuclear power plant, at 17 tons. CCS may ultimately prove crucial to making headway on limiting emissions of greenhouse gases linked to climate change (see "[The Cost of Limiting Climate Change Could Double without Carbon Capture Technology](#)"). Yet the technology has mostly stalled. In North America, a coal plant with CCS in Mississippi has been long delayed. Another in Illinois only recently broke ground on a chimney (see "[Construction Begins at a Carbon Capture Plant, but Will It Ever Be Completed?](#)"). With no tax or other price placed on carbon dioxide emissions, utilities have no impetus to get such projects going. Even the Saskatchewan plant wouldn't have worked unless it used the carbon dioxide to force yet more hydrocarbons out of the ground, Herzog says.

## **LEGISLATION AND REGULATION**

### [Common Sense National Water Bill First of Its Kind](#)

[Fierce Energy, Sept. 25] Small communities often have difficulty financing the construction and maintenance of traditional long-pipe drinking water systems as the cost per resident can be prohibitively expensive. New legislation has been introduced in Congress to provide small communities nationwide with critical information on the use of water wells and water well systems for high-quality drinking water has been introduced that is aimed at reducing the costs to federal, state, and local governments in providing quality drinking water to millions living in rural and isolated communities by promoting cost-effective community well water systems. Introduced by Congressman Marlin Stutzman (R-IN), the Water Supply Cost Savings Act (Savings Act), HR 5659, is being widely supported by the water supply industry, including the Water Systems Council, the Water Quality Association and the National Groundwater Association, and being hailed as "the first piece of national legislation to provide local community decision makers with a cost effective option to utilize smaller domestic well water systems to meet community drinking water needs."

### [DOE Establishes 90.1-2013 As Building Energy-Efficiency Standard](#)

[Energy Manager Today, Oct. 3] The U.S. Department of Energy (DOE) has issued a ruling that

establishes ASHRAE/IES's 2013 energy-efficiency standard as the commercial building reference standard for state building energy codes. The move comes after preliminary analysis that the 2013 standard contains energy savings over the 2010 -- specifically, 8.5 percent source energy savings and 7.6 percent site energy savings. DOE attributes the greater energy savings to improvements in ANSI/ASHRAE/IES Standard 90.1-2013, Energy Standard for Buildings Except Low-Rise Residential Buildings, in areas including better lighting, fans, commercial refrigeration, and boilers. As a result, states are required to update their codes to meet or exceed the 2013 standard within two years, creating a plethora of opportunities for utilities and energy service companies in terms of energy-efficiency partnerships and programming. States must currently meet or exceed the 2010 standard, which serves as the commercial building reference standard for state building energy codes under the federal Energy Conservation and Production Act.

#### [U.S. Court Upholds FERC Order 1000 Rule](#)

[NASEO News, Sept. 17] The U.S. Court of Appeals for the District of Columbia Circuit recently upheld rules from the Federal Energy Regulatory Commission calling on utilities to take various actions, including increased planning of large transmission projects. The case addressed whether states could be forced to coordinate on transmission planning, carbon standards and paying for actions to create new transmission capacity. "The Commission reasonably determined that regional planning must include consideration of transmission needs driven by public policy requirements," the three-judge panel wrote in a 97-page unanimous ruling.

### **WESTERN POWER**

#### [Battle Lines Drawn Over Colorado Net Metering Dispute](#)

[PV Tech, Oct. 9] US utility, Xcel Energy (XE), has said it is hoping to prove a "hidden" solar subsidy in a series of hearings discussing net metering (NM) in the state of Colorado. Meanwhile solar advocacy group, The Alliance for Solar Choice (TASC) has accused XE of using "flawed methodology" in its argument and of protecting a "monopoly". Back in July, XE [filed its renewable energy plan](#) for 2014 with the Colorado Public Utilities' Commission (PUC). In response to XE's plan the PUC called for an examination into net metering rates, resulting in four hearings, one last July, one 1 October, and two to follow. For the following two sessions, senior media representative for XE, Mark Stutz said to PV Tech via e-mail the utility is "seeking verification that there is a hidden NM subsidy". Stutz described the apparent hidden subsidy for solar NM customers as "the benefits of the grid and other costs". Stutz said this benefit is delivered to NM users "essentially, through another mechanism on customer bills. Our non-rooftop solar customers don't even really know they're paying this subsidy each month." Stutz said once the PUC hearings reveal the "hidden subsidy", the cost "needs to be transparent so that all non-solar customers know they are paying it", and would also need to be recorded through the state's Renewable Energy Standard Adjustment (RESA).

#### [Loving, N.M., To Be Site of New Gas Plant](#)

[Carlsbad Current-Argus, Oct. 7] CARLSBAD -- A Houston -based company will build a new cryogenic natural gas processing plant and pipelines south of Loving , a project Carlsbad Department of Development Executive Director John Waters called "a monster transition line." Enterprise Products Partners LP announced Monday it will begin construction on 80 miles of new natural gas gathering lines and a 75-mile, 12-inch diameter natural gas liquids (NGL) pipeline to transport NGLs from the southern Eddy County plant to the company's storage facility in Gaines County, Texas. Enterprise Products expects the new plant to be completed and in operation by the first quarter of 2016. The project will effectively double the company's processing capacity in the Delaware Basin from 200 to 400 million cubic feet per day, with the potential of future expansion. "The addition of this new cryogenic natural gas processing facility to our integrated midstream network provides producers in this prolific region improved flow assurance and additional market choices, including access to expanding petrochemical facilities and export opportunities along the Gulf Coast ," A.J. "Jim" Teague , chief operating officer of Enterprise Products Holdings LLC , said in a news release. Enterprise Products Partners is a natural gas and crude oil pipeline company based in Houston . The company reported managing an asset base of \$41 billion in March. Waters said he was happy to see continued expansion of the oil and gas industry in the most southern portion of Eddy County.

#### [Panasonic to Invest Heavily in Tesla's Nevada Gigafactory](#)

[San Jose Mercury News, Oct. 7] Panasonic will invest "tens of billions of yen" -- hundreds of millions of dollars -- in Tesla's Nevada gigafactory, according to a statement made by Panasonic's CEO at a trade show in Japan. The gigafactory will produce lithium-ion batteries for Tesla's electric cars and stationary storage devices. "Our initial investment amount in the factory

will be tens of billions of yen," said Chief Executive Kazuhrio Tsuga during comments at CEATEC, the Combined Exhibition of Advanced Technologies trade show, according to wire reports. "We will expand the size as we go by pouring in further installments of similar amounts." Each Model S sedan contains more than 7,000 lithium-ion battery cells, which Tesla gets from Panasonic. While the battery cells are similar to those used in laptops and game consoles, Tesla's are specifically designed for electric vehicles and were jointly developed by Tesla and Panasonic. Earlier this month, Panasonic announced that it has established Panasonic Energy Corporation of North America, a new manufacturing company of lithium-ion batteries, in Sparks, Nevada, where Tesla's gigafactory will be located. The gigafactory is expected to employ about 6,500 people. Tesla hopes to drive down battery costs so that it can come out with the Model 3, an electric vehicle that will cost about \$35,000.

#### [Proposal Dropped for Calif. Solar Tower That Poses a Threat to Birds](#)

[Associated Press, Oct. 8] Sacramento, CA — A solar-energy company has dropped a proposal to build a 75-story solar tower near California's Joshua Tree National Park employing a kind of solar technology that can cause birds to ignite in midair. The California Energy Commission was slated to vote on BrightSource Energy's project this month, before the company withdrew its application. The plant would have used "power tower" technology that trains concentrated solar power on steam boiler towers. State and federal officials and conservation groups say a similar BrightSource tower near the Nevada border proved unexpectedly deadly to birds that flew through the concentrated rays. BrightSource and its partners decided they needed a project that would "better meet the needs of the market and energy consumers," Senior Vice President Joe Desmond said Wednesday.

#### [Western Governors Tell Forest Service Proposed Directive Does Not Recognize State's Sole Authority over Groundwater](#)

[Western Governors' Association, Oct. 6] Western Governors have submitted comments to the U.S. Forest Service (USFS) about its [proposed directive on groundwater resource management](#) that details why this measure could have significant implications for Western states and their groundwater resources. For a complete description of Western Governors' concerns regarding the proposal, [read and download the letter](#) signed by Nevada Gov. Brian Sandoval, Western Governors' Association (WGA) Chairman, and Oregon Gov. John Kitzhaber, WGA Vice Chairman.

## **ARIZONA STATE INCENTIVES/POLICIES**

### **ARIZONA COMMERCE AUTHORITY (ACA)**

#### **INCENTIVES**

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

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- [Commercial/Industrial Solar](#)
- [SBIR/STTR](#)
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#### [\(ACA\) PROGRAMS](#)

#### [DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY \(DSIRE\)](#)

- [Arizona Incentives/Policies](#)
- [Federal Incentives/Policies](#)
- [Solar Policy News](#)

DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

## GRANTS

The following solicitations are now available:  
(Click on title to view solicitation)

- [Energy for Sustainability](#) – Current Closing Date for Applications: Nov. 5, 2014 Full Proposal Window: Oct. 01, 2014 – Nov. 5, 2014
- [SunShot "Race to the Roof" Initiative](#) - Registration due October 31, 2014
- [Energy, Power, and Adaptive Systems](#) - Close Date: Nov. 3, 2014
- [National Robotics Initiative](#) - Response due Nov. 14, 2014
- [NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016](#) - Close Date: Dec. 11, 2014
- [Energy for Sustainability](#) – Current Closing Date for Applications: Nov. 5, 2014
- [Nuclear Energy University Programs - Fellowship and Scholarship](#) – Response due November 30, 2015
- [Advanced Fossil Energy Projects](#) - Solicitation Number: DE-SOL-0006303 Expiration Date: Nov. 30, 2016
- [Repowering Assistance Program](#) - Ongoing
- [Rural Business Enterprise Grants](#) - Ongoing
- [Rural Business Opportunity Grants](#) - Ongoing
- [Sustainable Agriculture Research and Education Grants](#) - Ongoing
- [Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power](#) – Various Deadlines
- [U.S. Dept. of Agriculture - Rural Development Grant Assistance](#)
- [Green Refinance Plus](#) - Ongoing